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JOHN E BECK
XEROX CORPORATION
XEROX SQUARE 20A
ROCHESTER, NY 14644

EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2612	14

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/408,873	SEEGER ET AL.	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18, 20, and 25 - 42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18, 20, and 25 - 42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9 June 2004 have been fully considered but they are not persuasive.

2. More specifically, the Applicant's arguments directed towards Claims 25 – 28 have been fully considered but they are not persuasive. The Applicant argues that, "Anderson fails to disclose or suggest as claimed by Applicant: recording a first view of an area having one or more objects while a lens is positioned at an offset position within a plane substantially orthogonal to an optical axis of the lens while the camera is at a first position and recording a second view of the area while the lens is positioned at the offset position within the plane after the camera is rotated to a second position. Instead as disclosed in Anderson, the offset position of the lens within the plane orthogonal to the optical axis of the camera changes when the camera is rotated from scene selection 1 to scene selection 2, as described in column 6 and shown in figure 6."

Initially, in response to the Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Lastly, the Applicant's arguments are overcome by the fact that the Examiner did not rely upon Anderson for providing the "a lens is positioned at an offset position" feature of independent Claim 25. Rather as stated in the Office Action (Page 5, paragraph 9), "Anderson discloses ... recording a first view of an area having one or more objects **while a lens is**

positioned in a plane substantially orthogonal to an optical axis of the lens while the camera is at a first position" and "recording a second view of the area **while the lens is positioned in the plane** after the camera is rotated to a second position ... **Anderson does not disclose a camera wherein the lens is positioned at an offset position** within in a plane substantially orthogonal to an optical axis of the lens ... On the other hand, **Chevrette et al. disclose a lens that is able to be positioned to a plurality of predetermined offset positions within a lens plane**, the lens plane located substantially orthogonal to an optical axis of the lens."

For these reasons, the Examiner maintains the rejection of Claims 25, 26 and 28 under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. in view of Chevrette et al. and the rejection of Claim 27 under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. in view of Chevrette et al. in further view of Kang et al.

3. Applicant's arguments with respect to Claims 18 – 20 and 29 – 30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 18, 20, 29 – 31, 34, 35, 38, 41, and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. in view of Chevrette et al.

6. For **Claims 18 and 29**, Taylor et al. disclose, as shown in figures 1, 3, and 8 and as stated in columns 2 (lines 66 and 67), 3 (lines 1 – 13, 34 – 40, and 54 – 65), 4 (lines 26 – 65), and 5 (lines 55 – 60), an image acquisition system and a corresponding method (see figure 8), comprising a plurality of cameras (106 and 108) simultaneously records a plurality of views (see dotted lined respective camera field of view in figure 3) an area having one or more objects (104) to produce a plurality of camera images of different portions of the area (see column 3, lines 54 – 65), each camera (106 and 108) having a lens positioned within a plane substantially orthogonal to an optical axis of the lens (see column 4, lines 51 – 65, and figure 4), wherein the view of each camera is positioned to record a portion of the area (see dotted lined respective camera field of view in figure 3); and

an image processing system (110) coupled to the plurality of cameras (106 and 108) and operable to combine the plurality of camera (106 and 108) images simultaneously recorded to produce a composite image having a higher resolution than the resolution of one or more of the simultaneously recorded view of the area (see column 3, lines 54 – 65, and column 5, lines 55 – 60).

Taylor et al. does not disclose wherein at least one of the cameras has an offset lens to produce an oblique field of view of the portion it records of the area and wherein the offset lens of the at least one camera may be shifted to one of a plurality of offsets. On the other hand, Chevrette et al. disclose, as shown in figures 1D, 2, and 3A and as stated in columns 6 (lines 34 – 67), 7, and 8 (lines 1 – 39), a camera that has an offset lens (10) to produce an oblique field of view of the portion it records of an area (see figure 1D). The lens (10) is able to be positioned to a plurality of predetermined offset positions within a lens plane (L – with the solid black lines

and the dotted black lines representative of light rays when the lens is positioned in a plurality of predetermined offset positions I and I'), the lens plane located substantially orthogonal to an optical axis of the lens (clearly shown in figure 2); and an image sensor (detector array) having a relatively planar surface (12) and operable to detect light rays originating from one or more objects within an area having a plurality of views, wherein each view is recorded while the lens is positioned at a corresponding one of the predetermined offset positions (see figure 1d). Chevrette et al. teach of a camera system that displaces the lens (10) by a distance (d), thereby displaying the optical axis of the lens, as well as the focal point, and the image on the image plane by the same distance while capturing an image at each offset position.

As stated in columns 1 (lines 34 – 67) and 2 (lines 1 – 36), of Chevrette et al., at the time the invention was made, one with ordinary skill in the art would have been motivated to include a camera that has an offset lens to produce an oblique field of view and associated method thereof, as taught by Chevrette et al., in the image acquisition system and method thereof, of Taylor et al., as a means to provide an apparatus for capturing a high resolution image using a simple low power circuit configuration so as to reduce aliasing occurring during typical imaging via a focal plane array. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to include a camera that has an offset lens to produce an oblique field of view and associated method thereof, as taught by Chevrette et al., in the image acquisition system and method thereof, of Taylor et al.

7. As for **Claims 20 and 30**, according to *The American Heritage® Dictionary of the English Language, Fourth Edition*, a mosaic is a composite picture made of overlapping, usually aerial, photographs. Thus, as shown in figures 3 and 8 and as stated in column 3 (lines 54 – 65),

Taylor et al. disclose, the image acquisition system of Claim 18 and method of Claim 29, wherein the image processing system (110) is operable to produce the composite image by mosaicing the camera images.

8. As for **Claims 31 and 38**, Taylor et al. disclose, as shown in figure 8 and as stated in columns 3 (lines 34 – 40 and 54 – 65), the image acquisition system of Claim 18 and method of Claim 29, wherein the image processing system (110) is operable to combine the plurality of camera (106 and 108) to produce a composite image of the plurality of views by patching the plurality of camera images together at regions of overlap.

9. As for **Claims 34 and 41**, Taylor et al. disclose, as shown in figures 3 and 4 and as stated in column 4 (lines 51 – 65), wherein at least a second of the plurality of cameras (106 or 108) has a fixed offset lens to produce an oblique field of view. A "fixed offset lens" is introduced in the present claims and is not reference to parent Claims 18 and 29, respectively, therefore, the Examiner interprets "fixed offset lens" with respect to the context of the present claim language only. Therefore, Taylor et al., in figures 3 and 4, that the camera (106) has a lens that is offset with respect to the camera, i.e. it is not directly centered on the camera, and the lens is fixed in that position, i.e. it cannot be directly centered on the camera.

10. As for **Claims 35 and 42**, Taylor et al. disclose, as shown in figures 3 and 4, wherein at leas one camera (106 or 108) with no lens offset (see figure 3) is between the cameras (106 or 108) recording the oblique fields of view.

11. **Claims 32, 33, 39, and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. in view of Chevrette et al. in further view of

12. As for **Claims 32 and 39**, Taylor et al. disclose, as shown in figure 4 and as stated in column 4 (lines 51 – 65), that the plurality of cameras (106 and 108) are arranged separately in two independent housings. Taylor et al. do not disclose wherein the plurality of cameras are arranged together in a housing.

However, arranging the plurality of cameras together in a housing are an obvious matter of design choice. As stated in column 4 (lines 44 – 50), the camera housings are geometrically constrained to simplify the number of operations that must be performed to for a composite image of the area. Moreover, the "cameras 107 and 109 are fixedly positioned in the camera housings 106 and 108, respectively, at an angle that is substantially perpendicular to the x-y plane of the surface 102", which simplifies computations performed by the frame merger module by minimizing perspective distortion in the images recorded. Taylor et al. disclose separate housings; however, Taylor et al. clearly states fixedly positioning the camera housings and the cameras within the housings provides the advantage of reducing operations and computations to form a composite image. Therefore, it would have been obvious one with ordinary skill in the art to also fixedly arrange the cameras together within a housing that is fixedly arranged.

13. As for **Claims 33 and 40**, Taylor et al. disclose, as shown in figure 1, wherein the plurality of cameras (106 and 108) are positioned over a desk (102).

14. **Claims 25 – 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Chevrette et al.

15. For **Claim 25**, Anderson discloses, as shown in figures 2 and 6 – 10 and as stated in columns 6 (lines 8 – 67), 7, 8, 9, and 10 (lines 1 – 14), a method of scanning with a camera, comprising the steps of:

(a) recording a first view (positions 1, 2, or 3) of an area having one or more objects (scene sections 1, 2, or 3) while a lens (220) is positioned in a plane substantially orthogonal to an optical axis (236) of the lens (220) while the camera is at a first position (see figures 2, 6, and 9);

(b) recording a second view (positions 1, 2, or 3) of the area (scene sections 1, 2, or 3) while the lens (220) is positioned in the plane after the camera is rotated to a second position (positions 1, 2, or 3 as shown in figures 6 and 9); and

(c) combining all recorded views to produce a composite image having a higher resolution than the resolution of one or more of the recorded views (see figures 8 – 10).

While Anderson discloses a lens (220) that is positioned in a plane substantially orthogonal to an optical axis (236) of the lens (220), as shown in figure 2, Anderson does not disclose a camera wherein the lens is positioned at an offset position within in a plane substantially orthogonal to an optical axis of the lens.

On the other hand, Chevrette et al. disclose, as shown in figures 1D, 2, and 3A and as stated in columns 6 (lines 34 – 67), 7, and 8 (lines 1 – 39), a lens (10) that is able to be positioned to a plurality of predetermined offset positions within a lens plane (L – with the solid black lines and the dotted black lines representative of light rays when the lens is positioned in a plurality of predetermined offset positions I and I'), the lens plane located substantially orthogonal to an optical axis of the lens (clearly shown in figure 2); and an image sensor (detector array) having a

relatively planar surface (12) and operable to detect light rays originating from one or more objects within an area having a plurality of views, wherein each view is recorded while the lens is positioned at a corresponding one of the predetermined offset positions (see figure 1d). Chevrette et al. teach of a camera system that displaces the lens (10) by a distance (d), thereby displaying the optical axis of the lens, as well as the focal point, and the image on the image plane by the same distance while capturing an image at each offset position.

As stated in columns 1 (lines 34 – 67) and 2 (lines 1 – 36), of Chevrette et al., at the time the invention was made, one with ordinary skill in the art would have been motivated to include a method using a lens that is positioned at an offset position within in a plane substantially orthogonal to an optical axis of the lens, as taught by Chevrette et al., in the method of scanning with a camera, of Anderson, as a means to provide a method of capturing a high resolution image using a simple low power circuit configuration so as to reduce aliasing occurring during typical imaging via a focal plane array. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to include a method using a lens that is positioned at an offset position within in a plane substantially orthogonal to an optical axis of the lens, as taught by Chevrette et al., in the method of scanning with a camera, of Anderson.

16. As for **Claim 26**, Anderson disclose, as clearly shown in figures 8 – 10, the method of Claim 25, further comprising between step (b) and (c), the step of:

(d) recording a next view (positions 1, 2, or 3) of the area (scene sections 1, 2, or 3) while the lens is positioned at the offset position (see obvious ness set forth above) within the plane while the camera is rotated to a third position.

17. As for **Claim 27**, Anderson disclose, as clearly shown in figures 8 – 10, the method of Claim 26, further comprising the step of:

(e) repeating step (d) unit all view of the area have been recorded.

18. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Chevrette et al. in further view of Kang et al.

19. For **Claim 28**, Anderson view of Chevrette et al. show a method a method of scanning with a camera, comprising the steps of recording a first view of an area while a lens is positioned at an offset position within in a plane, recording a second view of the area while the lens is positioned in the plane after the camera is rotated to a second position, and combining all recorded views to produce a composite image having a higher resolution than the resolution of one or more of the recorded views. However, Anderson in view of Chevrette et al. do not show wherein step (b) further comprises the step of recording the second view of the area while the lens is position at the offset position with the plane while the camera is rotated 180 degrees to the second position.

On the other hand, Kang et al. also shows, as seen in figures 1- 3 and column 3 (lines 30 – 60), a method of scanning with a camera including at least two recorded views of an area wherein the camera (100) is in a first position to record a first view (314) and the camera is rotated (about axis 276) to a second position, 180 degrees from the first position, to record a second view (319) of the area. As stated in column 1 (lines 10 – 60), at the time the invention was made, one with ordinary skill in the art would have been motivated to include a method of scanning with a camera wherein the camera records a first view in a first position and is rotated

180 degrees to a second position to record a second view, as taught by Kang et al., in the method of scanning with a camera, or Anderson in view of Chevrette et al. as a means to record a panoramic image. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to include a method of scanning with a camera wherein the camera records a first view in a first position and is rotated 180 degrees to a second position to record a second view, as taught by Kang et al., in the method of scanning with a camera, or Anderson in view of Chevrette et al.

20. **Claims 36 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Chevrette et al. in further view of Ejiri et al.

21. As for **Claims 36 and 37**, Anderson discloses, as shown in figure 6A, recording a first view of an area while the camera is at a first position and recording a second view of the area after the camera is rotated to a second position. Anderson discloses that the camera is rotated to all positions about an axis perpendicular to the optical axis of the camera lens and does not disclose that the camera is rotated to all positions about an axis parallel to the optical axis of the camera lens.

On the hand, Ejiri et al. also disclose a camera scanning method operable to produce a composite image by mosaicing a plurality of camera images. More specifically, Ejiri et al. teach, as shown in figure 5 and as stated in column 5 (lines 62 – 66), that the plurality of images are recorded while the camera is rotated (by angle γ) to all positions (31 and 32) about an axis parallel to the optical axis of the camera lens (O). As shown in figure 6, the angle γ corresponds to the rotation of the camera about an axis (ξ) that is parallel to the optical axis of the camera

(O). As stated in column 1 (lines 25 – 39, 61, and 62), at the time the invention was made, one with ordinary skill in the art would have been motivated to record a plurality of views while the camera is rotated to all positions about an axis parallel to the optical axis of the camera lens, as taught by Ejiri et al., in the camera scanning method, taught by Anderson in view of Chevrette et al., as a means to form a composite image with a naturally continuous appearance comprised of a plurality of distortion free images wherein the relative angle of each of the plurality of individual images is not readily available. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have recorded a plurality of views while the camera is rotated to all positions about an axis parallel to the optical axis of the camera lens, as taught by Ejiri et al., in the camera scanning method, taught by Anderson in view of Chevrette et al.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
August 23, 2004

NGOC-YEN VU
PRIMARY EXAMINER